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Original Research

Psychological Resilience Skills Training To Improve Psychological Resilience, Self Esteem, And Quality Of Life

Rita Benya Adriani[1*] , Jenita Doli TineT Donsu[2] , Dwi Sulistyowati[3]

[1,3] Department of Nursing, Poltekkes Kemenkes Surakarta, Indonesia
[2] Department of Nursing, PoltekkesKemenkes Yoguakarta, Indonesia

ABSTRACT

Background: *It is expected that the quality of life of TB patients will improve after treatment, but research shows indications of emotional stress in TB patients at the end of treatment, clinical, social consequences, drug resistance, and decreased quality of life, especially psychological and social aspects. Research purpose knowing how the effect of psychological resilience, self esteem, quality of life of TB survivors.*

Methods: *A total of 61 TB survivors were taken by total sampling technique. 30 respondents in the experimental group were given psychological resilience skills training. Data was collected using the CD-RISC instrument for psychological resilience, Rosenberg self-esteem scale for self esteem, and WHOQOL-bref for quality of life. Pre test is taken before training. The post test was carried out 2 weeks after training. Data analysis used regression test with SPSS 19 software.*

Results: *Based on the SPSS analysis, it is known that no significant effect of psychological resilience on self esteem with p value of 0,33. Psychological resilience has a significant effect on quality of life with p value of 0,048. Self esteem has no significant effect on quality of life with p value of 0,335. Psychological resilience is more influential on social aspects than psychology on the quality of TB survivors.*

Conclussion: *Possibly related to the participating in the association of fellow TB survivors. It can also caused by the length of time to recover. Psychological resilience skills can be developed by stakeholders for TB survivors.*

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CONTACT
Rita Benya Adriani
benyaadriani@gmail.com
Departement of Nursing, Poltekkes Kemenkes Surakarta, Jln. Letjen Sutoyo, Mojosongo, Surakarta, Indonesia.

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INTRODUCTION

Tuberculosis (TB) is caused by acid fast bacteria (AFB) from the Mycobacterium group that can kill about two million people per year (Farmer & Sundberg, 1986). WHO data show an increase in the incidence of TB at the world level from 8,4 million per year to 10 million in 2005 and a slight decrease to 9,6 million in 2015. The Ministry of Health of The Republic of Indonesia (2013) shows the prevalence of TB in Indonesia is

0,4 %. of the total disease. The incidence of TB in 2017 was 420.994 (Ministry of Health, 2018).

The Directorate General of Disease Preventionj and Control the Ministry of Health of The Republic of Indonesia in 2018 found that the province of Central Java was third place after West Java and East Java with the number of TB incidences of 42.272. Most TB patients were in the productive age group, 15 – 55 years. The proportion of TB cases in Surakarta City in 2015 – 2018 ranged from 1755 and gradually decreased to 1178 (Surakarta Health Office, 2018). Mojosongo village had 36 (82%) patients who had treated, 8 patients (18%) had not treated and 44 patients had confirmed drug resistant tuberculosis. Even so, the Surakarta City government still maintains the slogan "*Healthy Solo Without TBC,"* because Surakarta City targets that in 2025 pulmonary TB is eliminated and in 2035 it is free from TB.

Quality of life and health are two interesting things to study because of the subjectivity of individual perceptions in viewing one's own position in life related to goals, expectations, and living standards which are influenced by local culture and value systems. This view affects physical, psychological health, social relationships, and the level of independence. Quality of life in Asian countries is still rank low, especially in term of physical and psychological (Alfauzan & Lucya, 2021) and social support (Masumoto *et al*., 2014). Common social stressors are stigma, discrimination, isolation, and lack of social support (Alene *et al.*, 2018).

Aspects of mental disorder that commonly accompany TB patients are depression, anxiety, and psychosis. The percentage of psychosis was greater at the end of treatment (Orovwigho et al., 2016). Concluded from various references obtained that the quality of life of TB patients did improve during therapy, but some patients experienced a decrease in quality of life due to comorbidities and drug resistance (Aggarwal, 2019). Muhammad *et al* (2014) found indications of emotional stress in TB patients at the end of treatment, resulting in not being able to carry out normal daily activities. TB survivors may have respiratory symptoms, abnormal spirometry, acute respiratory events, and symptoms that affect the ability to work (Meghji *et al*, 2020).

Differences in the quality of life of TB patients after treatment according to (Atif *et al*, 2016) are influenced by personal characteristics, cultural differences, and how to collect research data. Quality of life, especially in the mental component related to self esteem (Bartoces *et al*, 2009). Explained that a decrease in the quality of life occurred in TB patients within a period of 2-6 months after the completion of the treatment period (Chung *et al*, 2014). It is suspected that this decrease is related to low self esteem due to the stigma received by TB patients, comorbidities, and psychological disorders. Found that TB patients had lower self esteem compared to fracture patients (Orovwigho *et al*, 2016).

More than half of the participants showed low self esteem. Also found that the self esteem of pulmonary TB patients was lower than the self esteem of extra pulmonary TB patients (Othman *et al.*, 2011). Explains that the self esteem of TB patients is influenced by societal stigma, and psychological resilience (Husnaniyah, 2017) (Yazdi-ravandi, Taslimi, Shams, & Haghparast, 2013). Explain that low self esteem has a risk of decreasing quality of life (Cremers *et al.*, 2015).

Adds that low self esteem triggers individuals to be passive and aggressive (Eayuedwi, 2016). State that self esteem interventions are divided into five categories, namely the provision of social support, family/group counseling, physical fitness, strategies used in certain populations, and cognitive behavioral modification (Damian &

Robins, 2011). Explains that self esteem is a reflection of subjective feelings, strength and energy to act (Lachowicz-Tabaczek & Sniecinska, 2011). Self esteem is influenced by self evaluation of the 4 domains of self image, namely Competence, Morality, Social Acceptance and Energetic Disposition.

The low self esteem of TB patients is at risk of low psychological/mental domains and social relation on the quality of life of TB patients. Self esteem variable is directly proportional to psychological resilience (Pada *et al*., 2017; Lete *et al.*, 2019). Resilience as a process is the ability of an entity (individual, group, or community) to anticipate, resist, absorb, respond, adapt, and recover from disturbances (Carlson *et al.*, 2012). There is relationship between MDR TB patients and stress resilience during pandemic (Nindrea et al, 2020).

The ability of family to cope with adaptation to the 5 stages of family resilience is one form of family support to help TB patients build psychological resilience (Rachmawati et al, 2019). Provide psychological resilience skills and can increase the self esteem of adolescents with low social status (Aunillah & Adiyanti, 2015). The existence of a relationship between resilience skills and self esteem encourages researchers to provide psychological resilience skills to TB survivors to increase self esteem so that the quality of life also increases. Psychological resilience skills that will be given to TB survivors use a Cognitive Behavior Therapy (CBT) approach to provide cognitive and behavioral changes to TB survivors.

Cognitive Behavior Therapy was developed by Aron Beck in the early 1960s, to modify dysfunctional ways of thinking, believing, and becoming more adaptive (Beck & Dozois, 2011). CBT technique is a technique that guides TB survivors to be able to explore and find the negative mindset from within that causes psychological barriers, so that TB survivors are able to change their behavior internally (Knapp & Beck, 2008). This study aims to determine the description of psychological resilience, self esteem, quality of life of TB survivors who have completed psychological resilience skills.

MATERIALS AND METHOD

This study used a Quasi Experimental Design technique with a Pre Test – Post Test Control Group Design. The study was conducted in Mojosongo Village, Surakarta for nine months from January to October 2021. 61 TB survivors were obtained through total sampling technique. 30 TB survivors in the experimental group and 31 TB survivors in control group.

Data collection is done by self-report method. TB survivors were asked to complete The Connor-Davidson Resilience Scale (CD-RISC) to measure psychological resilience skills, The Rosenberg self-esteem Scale to measure self-esteem, and WHOQol-bref to measure quality of life in four domain (physical, psychological, social, and environmental helath). Psychological resilience skills training is given to TB survivors in 2 stage.

First, TB survivors recognizes events that cause positive an negative emotional reaction that trigger behavior. Second stage provides skills to change negative thought into positive ones. Before psychological resilience skills training is given, 1 (one) enumerator who has been given input in accordance with the knowledge of the researcher collect pre test data on Friday, 11 June 2021. Two weeks after given psychological resilience skills training respondents were asked to fill out the scale to measure psychological resilience, self esteem, and quality of life (post test) on June 24, 2021.

Research involving humans as research subjects needs to be accompanied by research ethics to ensure that the benefits obtained from research outweighs the harm caused. The ethical test was carried out on May 25, 2021 from Poltekkes Ministry of Health, Surakarta.

RESULTS

Univariate analysis shows the description of years of recovery, respondent's age, gender, psychological resilience, self esteem, and quality of life per domain. Most respondents had recovered from TB three years ago in the experimental group (66.6%) and one year ago (38.7%) in the control group (table 1).

Table 1. Years of Recovery

Years	Experiment	%	Control	%
2017	1	3.4%	2	6.5%
2018	10	33.3%	9	29%
2019	10	33.3%	8	25.8%
2020	9	30%	12	38.7%

Table 2 shows that most of the respondents were of productive age (15-55) as many as 21 respondents (70%) in the experimental group and 24 respondents in the control group (77.4 %).

Table 2. Respondent's Age

Age	Experiment	%	Control	%
15 – 25	4	13.3%	2	6.5%
26 – 35	8	26.7%	5	16.1%
36 – 45	3	10%	7	22.6%
46 – 55	6	20%	10	32.2%
56 – 65	6	20%	5	16.2%
66 – 75	3	10%	1	3.2%
76 – 85	0		1	3.2%
	30		**31**	

Table 3 shows that the most gender in the experimental group was male (56.7%) and the control group was female (67,7%).

Table 3. Gender

Gender	Experiment	%	Control	%
Male	17	56.7%	10	32.3%
Female	13	43.3%	21	67.7%

Table 4 shows the psychological resilience of respondents based on CD-RISC total score. The average total score in the experimental group was 35 (medium) with a min value of 27 and max 44 before being given treatment to 56 (moderate) with a min value of 45 and max 63. The increase in score indicates that respondents have been able to recognize their own emotion and thought both positive and negative, then change negative emotions and thought into positive ones, so that behavioral performance becomes positive.

Whereas in the control group there was a decrease in psychological resilience. The average total score was 36 (medium) with a total score of min 28 max 46. After being measured together with the experimental group that had received treatment, there was a decrease in the value of the total score for the average psychological resilience of 25.8 (medium) with a score of min 21, max 34.

Table 4. Psychological Resilience

Group	Pre/Post	Min	Max	Mean	SD	Category
Experiment	**Pre**	27	44	35	4,4	Middle
	Post	45	63	56	4,5	Middle
Control	**Pre**	28	46	36	5,1	Middle
	Post	21	34	25,8	3,74	Middle

Table 5 shows self esteem based on The Rosenberg Self-Esteem Scale total score . The average total score in the experimental group was 7.8 (medium) before treatment with a minimum score of 4 and a maximum of 12 to 23 (high) after treatment with a minimum score of 18 and a maximum of 27. In the control group the total score was 9, 74 (medium) before the experimental group received treatment with a value of min 6 and max 12. After the experimental group received treatment, in the control group, the total score was 5.32 (medium) with min 2 and max 9.

Table 5. Self Esteem

Group	Pre/Post	Min	Max	Mean	SD	Kategori
Experiment	**Pre**	4	12	7,8	2,3	Middle
	Post	18	27	23	2,2	High
Control	**Pre**	6	12	9,74	1,65	Middle
	Post	2	9	5,32	1,56	Middle

Table 6 shows quality of life based on WHOQol-bref. The average quality of life of TB survivors in the experimental group was 37.3 (moderate) with a min value of 33 and a max of 47 and up to 3.4 after being given treatment there was an increase in the quality of life with an average of 76.5 (high) with a min value of 68 and max 86 and up to 4.5. In the control group the total score was 37.8 (medium) before the experimental group received treatment with a min value of 31 and a max of 44 and up to 3.2. After the experimental group received treatment, in the control group, the total score was 36.3 with a min value of 30 and a max of 42 and up to 3,1.

Table 6. Quality of Life

Group	Pre/Post	Min	Max	Mean	SD	Kategori
Experiment	**Pre**	33	47	37.3	3.4	Middle
	Post	68	86	76.5	4.5	High
Control	**Pre**	31	44	37.8	3.2	Middle
	Post	30	42	36.3	3.1	Middle

Table 7 shows the quality of life of respondents in the intervention group, which amounted to 30, there was a significant increase in the total score in the social relations domain (D3). Before being given treatment, the mean of social relations was 9.53 (low) with up to 7.63 to 46.2 (high) with up to 17.2. In the environmental domain (D4), there

was a slight increase even though it was still in one group, from an average of 16.3 (moderate) with up to 5.34 to 37.4 (moderate) with up to 9,1.

There was a slight increase even though it was still in one category in the physical domain (D1). Before being given treatment, the mean value was 34.7 (medium) with up to 3.9. After being given treatment, the average was 49.2 (moderate) with up to 6.7. In the psychology domain (D2) there is no significant increase. Before being given treatment, the mean value was 30 (medium) with up to 7.4. After being given treatment, the average was 30.2 (moderate) with up to 8,9 (table 7).

Table 7. Quality of Life per Domain

Group	Pre/Post	D	Min	Max	Mean	Sd
Experiment	**Pre**	**D1**	31	44	34,7	3,9
		D2	19	50	30	7,4
		D3	0	25	9,53	7,63
		D4	6	25	16,3	5,34
	Post	**D1**	38	63	49,2	6,7
		D2	44	81	30,2	8,9
		D3	0	25	46,2	17,1
		D4	19	56	37,4	9,1
Control	**Pre**	**D1**	31	38	34	3,5
		D2	19	44	30	5
		D3	0	25	11	8,5
		D4	0	19	13	5,6
	Post	**D1**	31	38	32,8	3,11
		D2	19	38	30,6	5,3
		D3	0	25	9,68	8,34
		D4	6	19	6	5,27

Descpription:

D1 : Physical D3 : Social Relationships

D2 : Psychological D4 : Environmental

Bivariate analysis shows the relationship between variables of psychological resilience skills, self esteem, and quality of life. The normality test was carried out to determine the distribution of variable data before carrying out the correlation test using SPSS 21. The results of the normality test are summarized in table 8.

The normality test of psychological resilience data in the experimental group with Shapiro Wilk are p value pretest 0.500 > 0.05 and p value posttest 0.445 > 005. Thus, it can be stated that the data are normally distributed. Furthermore, the paired t test parametric statistical test was used to determine whether there was an effect of psychological resilience skills on psychological resilience in the experimental group. The results of the paired sample t-test are p value 0.000 <0.05, so there is an effect of psychological resilience skills on the psychological resilience of TB survivors in the experimental group.

The normality test of psychological resilience data in the control group with Shapiro Wilk showed that the pretest psychological resilience p value (0,205) > 0.05, then it was declared normal and the posttest p value (0.007) < 0.05, the data was declared abnormal. Thus, the analysis of the difference test uses Wilcoxon's non-

parametric statistical test. The result of the Wilcoxon test is p value 0.000 <0.05, so there is an effect of psychological resilience before and after in the control group.

The normality test of the experimental group's self esteem data using Shapiro Wilk were the pretest p value (0.352) > 0.05 and the posttest p value (0.153) so > 0.05 so the data was declared normally distributed. Thus, the paired sample t test parametric statistical test was used. The results of the paired sample t test obtained p value 0.000 <0.05, so there is an effect of self esteem before and after the experiment.

The normality test of quality of life data in the experimental group with Shapiro Wilk obtained that the p value of the quality of life of the pretest experimental group (0.028) < 0.05 then it was declared abnormal and the post-test p value (0.783) > 0.05 so that the data was declared normal, then used Wilcoxon non-parametric statistical test. Wilcoxon test results obtained p value 0.000 <0.05, so there is an effect on the quality of life before and after in the experimental group.

The normality test of the quality of life data in the control group with Shapiro Wilk obtained that the p value of the quality of life of the pretest control group (0.393) > 0.05 then it was declared normal and the posttest p value (0.247) so > 0.05 so that the data was declared normally distributed, then used parametric statistical test paired t test. The results of the paired sample t-test obtained p value 0.001 <0.05, so there is an effect on quality of life before and after treatment in the control group.

Table 8. Saphiro Wilk Normality Test and Difference Test

Group	Variabel	Fase	Statistik	p	Sig
Experiment Group	Resilience	Pre	0.969	0.500	0.000
		Post	0.966	0.445	
	Self Esteem	Pre	0.963	0.362	0.000
		Post	0.948	0.153	
	Quality of Life	Pre	0.921	0.28	0.000
		Post	0.978	0.783	
Control Group	Resilience	Pre	0.954	0.205	0.000
		Post	0.900	0.007	
	Self Esteem	Pre	0.907	0.11	0.000
		Post	0.941	0.89	
	Quality of Life	Pre	0.965	0.393	0.000
		Post	0.957	0.247	

The Relationship of Psychological Resilience to Self Esteem

Regression analysis was carried out by researchers to measure the effect of psychological resilience, self esteem, and quality of life variables. Table 9 shows the results of the regression analysis test obtained p value 0.330 > 0.05 so it is known that psychological resilience has no significant effect on self esteem with a coefficient value of 0.109.

Table 9. The Relationship of Psychological Resilience to Self-Esteem

Model		Unstandardized Coefficient		Standardized Coefficient		Sig
		B	Sd	Beta	t	
(Constant)		17.730	6.107		2.903	.007
Resilience	Experiment	.109	.110	.184	.992	.330

Model	Unstandardized Coefficient		Standardized Coefficient		Sig
	B	Sd	Beta	t	
postest					

Relationship of Psychological Resilience to Quality of Life

Table 10 shows the results of the regression analysis test obtained p value 0.048 <0.05 so it is known that psychological resilience has a significant effect on quality of life with a coefficient value of0.362.

Tabel 10. Psychological Resilience and Quality of Life

Model	Unstandardized Coefficient		Standardized Coefficient		Sig
	B	Sd	Beta	t	
(Constant)	56.366	9.758		5.777	.000
Resilience Experiment *postest*	.362	.175	.364	2.067	.048

Relationship of Self Esteem to Quality of Life

The results of the regression analysis test obtained p value 0.335 > 0.05 so that it is known that self esteem has no significant effect on quality of life with a coefficient value of - 0.307 (table 11).

Table 11. Relationship of Self-Esteem to Quality of Life

Model	Unstandardized Coefficient		Standardized Coefficient		Sig
	B	Sd	Beta	t	
(Constant)	83.771	7.491		11.183	.000
Resilience Experiment *postest*	-.307	.313	-.182	-.981	.335

DISCUSSION

Descriptively it can be explained that the youngest TB survivor (respondent) recovered was one year. The gender of TB survivors who became respondents was balanced between men and women of productive age between 15 to 55 years. This description is in line with data findings by WHO (2018) that the productive age is the age susceptible to TB. TB sufferers are at risk of resistance, death, and decreased work productivity. In the end, these risks will significantly affect the economy. As is the case in Brazil (Martins-Melo *et al.*, 2020) and Africa (Kirigia & Muthuri, 2016).

Found that post-tuberculosis lung damage (Post Tuberculosis Lung Damage) brings its own consequences for TB sufferers even after the treatment period has finished (Meghji et al., 2020). TB survivors are at risk for respiratory symptoms, abnormal spirometry, acute respiratory events, and symptoms that affect the ability to work. The results of this study were not able to show whether there was a decrease in the quality of life of TB survivors because the researchers did not measure the quality of life of TB survivors during and after treatment. Measurement of quality of life was given to TB survivors who had the youngest recovery age one year before and after treatment.

The results showed that psychological resilience was positively related to quality of life with p value 0.048 <0.05 and coefficient value 0.362. This means that the higher the psychological resilience, the higher the quality of life. There is significant relationships between psychological resilience and quality of life (Bastaminia et al., 2016; Karimirad et al., 2018). Psychological resilience is a mediator variable for distress and Quality of Life (Wu et al., 2015). Descriptively it was revealed that the average quality of life of TB survivors was in the moderate category before being given treatment and became high after being given treatment (table 4.6).

The biggest contributor to the improvement in the quality of life of TB survivors is the domain of social relations (D3). Family support mediates psychological resilience and qualitay of life (Zhang, Zhao, Cao, & Ren, 2017). There was a significant increase of 36.67 points from the low to high category (table 4.7). This means that before being given treatment, TB survivors experience obstacles in terms of social relations, such as obtaining social support or relating to sexual activity. Awakening from a sense of adversity that is packaged in psychological resilience skills helps TB survivors to overcome problems in social relationships. The results showed p value 0.000 <0.05, so there was an effect on the quality of life before and after in the experimental group.

Meanwhile, in the environmental domain (D4), there was an increase in points with a range of 21.1 points, but it was still in the moderate category. This shows that although initially TB survivors experienced obstacles in matters related to the environment such as financial resources, access to social convenience and obtaining information sources and demonstrating their skills in the environment, there was an increase even though it was still in one moderate category. In the physical health domain (D1) there is a range of 14.5 points. The average before is 34.7 (moderate) to 49.2 (moderate). This shows that TB survivors are relatively unimpeded in their daily activities.

The uniqueness occurred in the psychological domain (D2) which did not change with a mean of 30 to 30.2. The results of this study are different from (Yazdi-Ravandi *et al*., 2013) who found that psychological resilience affects the psychological domain on the patient's quality of life. This may be related to the completion of the treatment period. According to (Chung *et al*., 2014) a decrease in the quality of life occurs in TB patients within a period of 2-6 months after the completion of the treatment period. Meanwhile, the youngest respondent's recovery age in this study was one year after the treatment period was over. It is suspected that the TB survivor was able to adjust to his health condition so that he did not experience a significant downturn, and needed help to get out of the slump due to the TB disease he had suffered.

Explained that there was a relationship between psychological resilience and self esteem, but the results showed that psychological resilience was not related to self esteem with a p value of 0.330 > 0.05 (Karatas & Cakar, 2011). Explains that self esteem is a predictor of psychological resilience because emotional balance and self-confidence are very important for TB survivors to deal with stress (Balgiu, 2017). Based on the findings of (Belgiu, 2017), it can be explained that TB survivors do not experience emotional balance disorders even though they experience problems in social relationships.

The results also showed that self esteem was not significantly related to quality of life with p value 0.335 > 0.05. In this study, the increase in the quality of life of TB survivors was caused by increased social relationships. Not related to the mental component as the results of research by Bartoces, et al (2009). This can happen because

TB survivors are able to adapt to the risk of TB disease. This adaptability may be related to TB survivors' diligent participation in or being active in associations with fellow TB survivors. It can also be caused by the length of time recovering from tuberculosis.

CONCLUSIONS

Based on the description above, it can be concluded that there is no relationship between psychological resilience and self esteem of TB survivors after acquiring psychological resilience skills with p value 0.330 > 0.05. There is a relationship between psychological resilience and quality of life for TB survivors after acquiring psychological resilience skills with p value 0.048 <0.05. There is no effect of self esteem on the quality of life of TB survivors after acquiring psychological resilience skills with p value 0.335 > 0.05.

Psychological resilience skills can be used and utilized to develop nursing knowledge in dealing with psychological resilience, self esteem, and quality of life of TB survivors. Nurses are expected to improve services in managing TB survivors by providing psychological resilience skills. Survivors' families should provide support to TB survivors in dealing with post-treatment problems. Psychological resilience skills can be used by the Community Health Center in helping to solve the problems of TB survivors after treatment.

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